भारतीय मानक

Indian Standard

IS 12898 : 2022

डेयरी उत्पाद — योगर्ट — विशिष्टि

(पहला पुनरीक्षण)

Dairy Products — Yoghurt — Specification

(First Revision)

ICS 67.100.10

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December 2022 **Price Group 6**

Dairy Products and Equipment Sectional Committee, FAD 19

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Dairy Products and Equipment Sectional Committee had been approved by the Food and Agriculture Division Council.

There has been a growing awareness world over regarding several nutritional and therapeutic attributes of fermented milk products. Therefore, these are popular as a health food in several countries. To cover specification for fermented milk products, covering *Dahi* and yoghurt, IS 7035 was published in 1973 with the title ‘Specification for fermented milk products’.

While revising the standard, the Sectional Committee decided to split the standard into two separate standards, one covering *Dahi* published as IS 9617 : 1980 ‘Specification for *Dahi’* and other covering yoghurt published as IS 12898 : 1989 Dairy products – Yoghurt – Specification’ as these terms are generally understood and these products are commonly marketed in the country. Several types of yoghurt, for example, plain, sweetened, flavored, fruit, liquid and frozen, have been developed over the years with varying fat percentage. IS 12898 : 1989 was developed to assist the manufacturers in the production and quality control of yogurt.

This revision has been brought out to harmonize the standard with the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011, and the major changes include :

a) Provision for addition of other harmless bacterial cultures has been incorporated; and
b) Raw materials, fat content and microbiological requirements of the product have been aligned with the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011

In the formulation of this standard, due consideration has been given to the provisions of the *Food Safety and Standards Act*, 2006 and the Rules and Regulations framed thereunder and the Legal Metrology (Packaged Commodities) Rules, 2011. However, this standard is subject to the restrictions imposed under these, wherever applicable.

The composition of the Committee responsible for formulation of the standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

DAIRY PRODUCTS — YOGHURT — SPECIFICATION

(First Revision)

1 SCOPE

1.1 This standard prescribes the requirements and the methods of test for yoghurt.

1.2 This standard applies to fermented milk products, where symbiotic cultures of *Lactobacillus delbrueckii* ssp. *bulgaricus* and *Streptococcus thermophilus* are mainly employed for the fermentation process.

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

3 TYPES

3.0 The yoghurt shall be of following types.

3.1 Plain Yoghurt

It is a yoghurt complying with 1.2 with a minimum fat content of 3.0 percent and maximum fat content of 15.0 percent.

3.2 Skimmed Yoghurt

It is a yoghurt complying with 1.2 with a maximum fat content of 0.5 percent.

3.3 Low Fat/Partly skimmed Yoghurt

It is a yoghurt complying with 1.2 with a minimum fat content of 0.5 percent and maximum fat content of 3.0 percent.

3.4 Sweetened Yoghurt

These are yoghurts complying with **3.1**, **3.2** or **3.3** containing one or more sweetening agents such as cane or beat sugar. Cane sugar may be replaced up to 25 to 30 percent by corn syrup or glucose syrup.

3.5 Flavoured Yoghurt

These are yoghurts complying with **3.1**, **3.2** or **3.3** with the addition of permitted flavouring and colouring materials with or without the addition of sweetening agents.

3.6 Fruit Yoghurt

These are yoghurts complying with **3.1**, **3.2** or **3.3** with the addition of fruit (in the recommended range of 5-25 percent, depending upon the type of fruit). These may further contain permitted flavours, colours and sweetening agents.

4 RAW MATERIALS

4.1 The following are the essential raw materials for the manufacture of yoghurt.

4.1.1 Milk and Milk Products

a) Milk, as defined in IS 13688, pasteurized (*see* IS 13688) or boiled; and/or
b) Concentrated milk and dried milk and other milk solids; and/or
c) Cream, white/cooking butter, butter oil and anhydrous milk fat.
d) Potable water (conforming to IS 10500).

4.1.2 Bacterial Culture

Cultures of *Lactobacillus delbrueckii* ssp. *bulgaricus* and *Streptococcus thermophilus* shall be used at such a rate so that the final count in the product is as specified under **5.4.2**.

4.2 Optional Ingredients

Yoghurt may contain the following optional ingredients:

a) Iodized Salt (conforming to IS 7224);
b) Sugar (only in sweetened and flavoured yoghurt);
c) Nutritive sweeteners other than sugar (only in flavoured yoghurt);
d) Non-dairy ingredients such as fruits and vegetables and their products such as juices, purees, pulps, preparations and preserves derived therefrom, cereals and cereal products, coconut and coconut products, honey, chocolate, nuts, coffee,

spices, condiments, culinary herbs and other harmless natural flavouring foods (only in flavoured yoghurt); and

e) Prebiotics and Probiotics [for the use of probiotics and prebiotics in dairy products, the provisions specified in the Food Safety and Standards (Health Supplements, Nutraceuticals, Food for Special Dietary Use, Food for Special Medical Purpose, Functional Food and Novel Food) Regulations, 2016 shall be complied].

4.3 Yoghurt may contain permitted food additives within the limits as specified under the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.

5 REQUIREMENTS

5.1 Description

The product shall have smooth surface with no whey separation and a custard like consistency.

The flavour and taste for the flavored yoghurt shall be typical of the flavour used with a mild to light acidic tinge.

5.2 Various yoghurt types shall also conform to the compositional requirements as given in Table 1.

Table 1 Requirement for Yoghurt
(*Clause* 5.2)

Sl No.	Characteristic	Requirements						Method of Test, Ref to
		Plain Yoghurt	Low Fat/Partly skimmed Yoghurt	Skimmed Yoghurt	Sweetened Yoghurt	Flavoured Yoghurt	Fruit Yoghurt	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	Total milk solids, percent by mass, *Min*	13.5	12.0	11.0	13.5	13.5	10.0	IS 11622
ii)	Milk fat, percent by mass	3.0 *Min*	0.5 *Min* and 3.0 *Max*	0.5 *Max*	3.0 *Min*	3.0 *Min*	1.5 *Min*	IS 11762
iii)	Milk solids-not-fat, percent by mass, *Min*	8.5	8.5	8.5	8.5	8.5	8.5	*See* Note
iv)	Milk protein, percent by mass, *Min*	3.2	3.2	3.2	3.2	3.2	2.6	IS 11917
v)	Sugar, percent by mass, *Min*	—	—	—	6.0	6.0	6.0	Appendix C of IS 4079
vi)	Titratable acidity	0.8-1.2	0.8-1.2	0.8-1.2	0.8-1.2	0.8-1.2	0.8-1.2	**14** of IS 1479 (Part 1)

NOTE — Calculate milk solid not fat percentage by subtracting milk fat percentage from total milk solids percentage.

5.3 The *p*H of the product shall be between 3.8 and 4.6, when tested as per **7** of IS 1479 (Part 1).

5.4 Microbiological Requirements

5.4.1 The microscopic examination of the product shall reveal the presence of *Lactobacillus delbrueckii* ssp. *bulgaricus* and *Streptococcus thermophillus*.

5.4.2 *Specific Lactic Acid Bacteria*

The specific lactic acid bacterial count per gram of the product shall not be less than 10^7 when determined according to the method prescribed in IS 12899. Any other microorganism as mentioned in **1.2** if added in the product for which claim is made on the label shall be in abundant quantity and the count per gram shall not be less than 10^6 when determined by appropriate method specific to the microorganism.

5.4.3 In addition to the above, the product shall comply with the microbiological requirements as given in Table 2.

Table 2 Microbiological Requirements for Yoghurt

(*Clause* 5.4.3)

Sl No.	**Characteristic**	**Requirement**				**Method of test, Ref to**
		Sampling Plan		Limit (cfu)		
		n	*c*	*m*	*M*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Coliform count	5	2	10 /g	1×10^2 /g	IS 5401 (Part 1)
ii)	*Staphylococcus aureus* (Coagulase positive)	5	2	10 /g	1×10^2 /g	IS 5887 (Part 8/ Sec 1* or Sec 2)
iii)	Yeast and mold count	5	3	50 /g	1×10^2 /g	IS 16069 (Part 1)
iv)	*Escherichia coli*	5	0	Absent/g	—	IS 5887 (Part 1) or IS 16424*
v)	*Salmonella sp.*	5	0	Absent/25 g	—	IS 5887 (Part 3/ Sec 1)
vi)	*Listeria monocytogenes*	5	0	Absent/g	—	IS 14988 (Part 1)

NOTES

1 For sampling plan, *see* Annex A.

2 In case of dispute, the method indicated by '*' shall be the referee method.

5.5 Hygienic Requirements

The product being obtained by natural fermentation, shall be processed, packed, stored and distributed under strict hygienic conditions as described in IS 2491.

6 PACKING AND MARKING

6.1 Packing

Yoghurt shall be packed in HDPE, polystyrene (food grade) cups, glass jars, wax coated cardboard cups, or any other equivalent material with suitable lids/covers.

6.2 Marking

6.2.1 The following information shall be marked legibly and indelibly on each container:

a) Name of the material also mentioning type of yoghurt and brand name if any;
b) Indication of the source of manufacture;
c) List of the ingredients in the descending order;
d) Statement regarding the special cultures other than specific yoghurt cultures added, if any;
e) Name and address of the manufacturer;
f) Batch or code number;
g) Month and year of manufacturing or packing;
h) Net quantity;
j) Direction for storage;
k) Expiry/use by (date, month and year); and
m) Any other requirements under the Food Safety and Standards (Labelling and Display) Regulations, 2020 and the *Legal Metrology Act*, 2009 and Rules framed thereunder.

6.2.2 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

7 SAMPLING

Representative samples of the product shall be drawn and tested for conformity to this standard as prescribed in IS 11546.

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
1479 (Part 1) : 2016	Methods of test for dairy industry: Part 1 Rapid examination of milk (*first revision*)
2491 : 2013	Food hygiene — General principles — Code of practice (*third revision*)
4079 : 1967	Specification for canned *Rasogolla*
5401 (Part 1) : 2012/ ISO 4832 : 2006	Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms: Part 1 Colony count technique (*second revision*)
5887	Methods for detection of bacteria responsible for food poisoning
(Part 1) : 1976	Isolation, identification and enumeration of *Escherichia coli* (*first revision*)
(Part 3/Sec 1) : 2020/ ISO 6579-1 : 2017	Horizontal method for the detection, enumeration and serotyping of *Salmonella*, Section 1 Detection of *Salmonella* spp. (*third revision*)
(Part 8/Sec 1) : 2002/ISO 6888-1 : 1999	Horizontal method for enumeration of coagulase-positive Staphylococci (*Staphylococcus aureus* and Other Species), Section 1 Technique using Baird — Parker agar medium
(Part 8/Sec 2) : 2002/ISO 6888-2 : 1999	Horizontal method for enumeration of coagulase-positive (*Staphylococcus aureus* and Other Species), Section 2 Technique using rabbit plasma fibrinogen agar medium
7224 : 2006	Iodized salt, vacuum evaporated iodized salt and refined iodized salt — Specification (*second revision*)
10500 : 2012	Drinking water — Specification (*second revision*)
11546 : 2012/ISO 707 : 2008	Milk and milk products — Guidance on sampling (*second revision*)
11622 : 1986	Method for determination of total solids content in condensed milk
11762 : 2013/ISO 1737 : 2008	Method for determination of fat content in condensed milk and evaporated milk
11917 : 2018/ISO 8968-1 : 2014	Milk and milk products — Determination of nitrogen content — Kjeldahl principle and crude protein calculation (*first revision*)
12899 : 1989	Dairy products — Yoghurt — Enumeration of specific lactic acid bacteria — Method of test
13688 : 2020	Packaged pasteurized milk — Specification (*second revision*)
14988 (Part 1) : 2020/ISO 11290-1 : 2017	Microbiology of food and feeding stuffs — Horizontal method for detection and enumeration of *Listeria monocytogenes*: Part 1 Detection method (*first revision*)
16069 (Part 1) : 2013/ISO 21527-1 : 2008	Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds: Part 1 Colony count technique in products with water activity greater than 0.95
16424 : 2016/ISO 7251 : 2005	Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive *Escherichia coli* — Most probable number technique

ANNEX B

(Table 2)

SAMPLING PLAN FOR MICROBIOLOGICAL REQUIREMENTS

B-1 SAMPLING PLAN FOR MICROBIOLOGICAL REQUIREMENTS

The terms *n*, *c*, *m* and *M* used in this standard have the following meaning:

n = Number of units comprising a sample.

c = Maximum allowable number of units having microbiological counts above *m* for 2-class sampling plan and between *m* and *M* for 3-class sampling plan.

m = Microbiological limit that separates unsatisfactory from satisfactory in a 2-class sampling plan or acceptable from satisfactory in a 3-class sampling plan.

M = Microbiological limit that separates unsatisfactory from satisfactory in a 3-class sampling plan.

B-2 INTERPRETATION OF RESULTS

2-Class Sampling Plan (where n, c and m are specified)	*3-Class Sampling Plan (where n, c, m and M are specified)*
1) Satisfactory, if all the values observed are $\leq m$ 2) Unsatisfactory, if one or more of the values observed are > *m* or more than *c* values are > *m*	1) Satisfactory, if all the values observed are $\leq m$ 2) Acceptable, if a maximum of *c* values are between m and *M* and the rest of the values are observed as $\leq m$ 3) Unsatisfactory, if one or more of the values observed are > *M* or more than c values are > *m*

ANNEX C

(*Foreword*)

COMMITTEE COMPOSITION

Dairy Products and Equipment Sectional Committee, FAD 19

Organization(s)	*Representative(s)*
National Dairy Research Institute, Karnal	Dr Manmohan Singh Chauhan (***Chairman***)
All India Food Processors Association, New Delhi	Dr K. L. Gaba Shri Vijay Gaur (*Alternate)*
Bihar State Cooperative Milk Producers' Federation Limited, (COMPFED). Patna	Shri Sushil Kumar Shri Rupesh Raj (*Alternate)*
Centre for Analysis and Learning in Livestock and Food (CALF), Anand	Dr Rajesh Nair Dr Rajeev Chawla (*Alternate*)
Confederation of Indian Food Trade and Industry, New Delhi	Ms Varsha Yadav Dr Anirudha Chhonkar (*Alternate)*
Confederation of Indian Industry, New Delhi	Ms Neha Aggarwal Ms Arti Gupta (*Alternate*)
Directorate of Marketing and Inspection, Faridabad	Dr D. M. Govind Reddy Shri Rahul Singh (*Alternate*)
Envirocare Labs Private Limited, Thane	Dr Nilesh Amritkar Dr Priti Amritkar (*Alternate*)
Export Inspection Council of India, New Delhi	Dr J. S. Reddy Shri Kumar Narender (*Alternate)*
Food Safety and Standards Authority of India, New Delhi	Dr Monica Puniya
Gujarat Cooperative Milk Marketing Federation Limited, Anand	Shri Sameer Saxena Shri Sayan Banerjee (*Alternate)*
IDMC Limited, Anand	Shri Devender Gupta Shri Prakash Maheshwari *(Alternate)*
Indian Dairy Association, New Delhi	Dr G. S. Rajorhia Dr Satish Kulkarni (*Alternate)*
Indian Stainless Steel Development Association, Gurgaon	Shri Rohit Kumar Shri Rajat Aggarwal *(Alternate)*
Jupitor Glass Works, New Delhi	Shri Karan Nangia Shri Amreek Singh Puri *(Alternate)*
Ministry of Fisheries, Animal Husbandry and Dairying, Department of Animal Husbandry and Dairying, New Delhi	Shri Goutam Kumar Deb Shri Ajit Kumar K. (*Alternate)*
Mother Dairy Fruit and Vegetable Limited, Delhi	Dr Nita Sen Shri Shailender Kumar (*Alternate)*

Organization(s)	*Representative(s)*
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National Dairy Research Institute, Karnal	Dr Vivek Sharma Dr Rajesh Kumar Bajaj (*Alternate)*
National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Sonipat	Dr P. K. Nema
National Institute of Nutrition, Hyderabad	Dr B. Santosh Kumar Dr Sylvia Fernandez Rao *(Alternate)*
Punjab State Coop. Milk Producers' Federation Limited, Chandigarh	Dr Sanjeev Kumar Sharma
Rajasthan Co-op Dairy Federation (RCDF) Limited, Jaipur	Shri J. D. Singh
Tamil Nadu Co-op Milk Producers' Federation Limited, Chennai	Shri S. R. Sankar Shri S. Jeyachandran (*Alternate)*
Tetra Pak India Private Limited, Pune	Shri Shashikant Ramnath Suruse Shri Sameer Singh Suhail (*Alternate)*
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